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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte MICHAEL R. KRAUSE and RENATO J. RECIO

Appeal 2009-006247
Application 09/980,761
Technology Center 2400

Before HUBERT C. LORIN, JEAN R. HOMERE, and BIBHU R.
MOHANTY, *Administrative Patent Judges*.

MOHANTY, *Administrative Patent Judge*.

DECISION ON APPEAL

The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, or for filing a request for rehearing, as recited in 37 C.F.R. § 41.52, begins to run from the “MAIL DATE” (paper delivery mode) or the “NOTIFICATION DATE” (electronic delivery mode) shown on the PTOL-90A cover letter attached to this decision.

STATEMENT OF THE CASE

The Appellants seek our review under 35 U.S.C. § 134 (2002) of the final rejection of claims 2-47 which are all the claims pending in the application. We have jurisdiction under 35 U.S.C. § 6(b) (2002).

SUMMARY OF THE DECISION

We AFFIRM.

THE INVENTION

The Appellants' claimed invention is directed to data processing and to a source process communicating with multiple destinations via a reliable multicast service (Spec. 1:8-10). Claim 2, reproduced below with some numbering in brackets added, is representative of the subject matter of appeal.

2. A distributed computer system comprising:
a source endnode participating in a multicast group and including:
a source process, which produces message data;
a send work queue having work queue elements that describe the message data for multicasting; and
[1] a network interface controller having a completion processing unit configured to generate a completion event to the source process in response to an indication that a predetermined percentage of destination endnodes in the multicast group have reliably received a selected amount of message data multicast from the source endnode;
[2] multiple destination endnodes participating in the multicast group, each destination endnode including:
a destination process; and
a receive work queue having work queue elements that describe where to place incoming message data;

communication fabric providing communication between the source endnode and the multiple destination endnodes; and

[3] multiple end-to-end contexts, each end-to-end context having a portion storing state information at the source node and a portion storing state information at a corresponding one of the destination endnodes to ensure the reception and sequencing of message data multicast from the source endnode to the corresponding one of the destination endnodes, wherein a reliable multicast comprises a series of replicated unicasts of message data though the send work queue and each of the end-to-end contexts portions at the source endnode to the receive work queue and the corresponding end-to-end context portion at each of the destination endnodes.

THE REJECTIONS

The Examiner relies upon the following as evidence in support of the rejections:

Block US 6,192,417 B1 Feb. 20, 2001

Request for Comment 793, Transmission Control Protocol, DARPA Internet Program, Sept. 1981.

P.V. Mockapetris, Analysis of Reliable Multicast Algorithms for Local Networks, ACM, 1983.

J.M. Aldrich, Topics in comp.lang.c++ post Oct. 16, 1997.

Request for Comment 2236, Internet Group Management Protocol, Version 2 (Nov. 1997).

The following rejections are before us for review:

1. Claims 2-18, 22, 25-41, and 45 are rejected under 35 U.S.C. § 103(a) as unpatentable over RFC 793, Mockapetris, and Block.
2. Claims 19-21 and 42-44 are rejected under 35 U.S.C. § 103(a) as unpatentable over RFC 793, Mockapetris, Block, and Aldrich.
3. Claims 23-24 and 46-47 are rejected under 35 U.S.C. § 103(a) as unpatentable over RFC 793, Mockapetris, Block, and RFC 2236.

THE ISSUES

At issue is whether the Appellants have shown that the Examiner erred in making the aforementioned rejections.

With regards to claim 2 and its dependent claims this issue turns on whether Block and Mockapetris discloses claim limitation [1] and [3] as cited above. The rejection of claim 25 and its dependent claims turns on a similar issue.

FINDINGS OF FACT

We find the following enumerated findings of fact (FF) are supported at least by a preponderance of the evidence:¹

FF1. Block has disclosed a multicast cluster servicer for communicating amongst a plurality of nodes without a dedicated local area network (Title). The system supports cluster communications for cluster configurations extending beyond a single local area network (Abstract).

FF2. Block at Col. 16:4-21 discloses that a CCMessages object is used for each message that is to be sent. The CCMessages object is kept until all nodes and groups that are supposed to receive the message acknowledge receipt. The CCMessages object identifies whether it is a single node or multicast group, the associated message queue, and the notify object to call on completion of the message.

FF3. Block at Fig. 5 discloses that the CCMessages Object is contained in the Cluster Communication Servicer 126.

¹ See *Ethicon, Inc. v. Quigg*, 849 F.2d 1422, 1427 (Fed. Cir. 1988) (explaining the general evidentiary standard for proceedings before the Patent Office).

FF4. Block at Fig. 1 discloses that the Cluster Communication Servicer 125 is an element of the Main Memory 120. The Network I/F 190 (network interface and processor 110 are shown as separate elements).

FF5. Block at Col. 8:53-56 states that “Those skilled in the art will recognize that the functionality of the network interface 190 can be implemented directly as part of main memory and processor 110”.

FF6. RFC 793 discloses a process of transmitting data in a transmission control protocol. Data is transferred from a segment into the user’s buffer (pg. 7-8). The transmission protocol uses a network output queue (pg. 24).

FF7. Mockapetris discloses the multicast for a sender to transmit separate messages to each destination and receive separate acknowledgement transmissions in return (pg. 153, column 2).

PRINCIPLES OF LAW

“Section 103 forbids issuance of a patent when ‘the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.’” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations including (1) the scope and content of the prior art, (2) any differences between the claimed subject matter and the prior art, (3) the level of skill in the art, and (4) where in evidence, so-called secondary considerations. *Graham v. John Deere Co.*, 383 U.S. 1, 17-18 (1966). *See also KSR*, 550 U.S. at 407 (“While the sequence of these questions might be reordered in any particular case, the [*Graham*] factors continue to define the

inquiry that controls.”) In *KSR*, the Supreme Court emphasized “the need for caution in granting a patent based on the combination of elements found in the prior art” *id.* at 415-16.

ANALYSIS

The Appellants first argue that the rejection of claim 2 is improper because the rejection of record fails to disclose claim limitation [1] as cited above (Br. 9-10, Reply Br. 4-5). In particular, the Appellants argue that in the Block reference that the cluster communication servicer 125 is an object in a computer program stored in the main memory 120 and not the network interface 190 (Reply Br. 5).

In contrast, the Examiner has determined that Block discloses the elements of claim limitation [1] at Col. 16:4-5, 8-11, and 18-19 (Ans. 16) and at Col. 8:53:56 (Ans. 6).

We agree with the Examiner. Claim 2 includes claim limitation [1] which requires:

[1] a network interface controller having a completion processing unit configured to generate a completion event to the source process in response to an indication that a predetermined percentage of destination endnodes in the multicast group have reliably received a selected amount of message data multicast from the source endnode.

(Claim 2).

Thus the claim requires that a network interface controller includes the completion processing unit. The Examiner cites to Block as disclosing this at Col. 16:4-5, 8-11, and 18-19 which references a CCMessages object which is used for each message that is to be sent and is kept until all nodes and

groups that are supposed to receive the message acknowledge receipt (FF2). This cited portion of Block states that the CCMessAge object identifies the notify object to call on completion of the message (FF2). The Appellants are correct that Block at Fig. 5 discloses that the CCMessAge Object is contained in the Cluster Communication Servicer 126 (FF3) and that Block at Fig. 1 discloses that the Cluster Communication Servicer 125 is an element of the Main Memory 120 (FF4). However, Block at Col. 8:53-56 states that “Those skilled in the art will recognize that the functionality of *the network interface 190 can be implemented directly as part of main memory and processor 110*”. Thus the CCMessAge object can be part of the network interface controller as the claim requires meeting the cited claim limitation [1].

The Appellants further argue that the RFC 793 reference fails to disclose claim limitation [3]. Particularly, it is argued that RFC fails to disclose “a reliable multicast to a group of destination endnodes wherein the reliable multicast comprises a series of replicated unicasts to each endnode” (Br. 11).

The Examiner has cited the elements of claim limitation [3] as being not just in RFC 793, but in combination with Mockapetris as well. Here, RFC 793 does disclose a process of transmitting data in a transmission control protocol (FF6). Data is transferred from a segment into the users buffer (FF6). The transmission protocol uses a network output queue (pg. 24). Thus RFC 793 discloses an end-to-end context (between nodes) for transferring data (information) with an output queue (work queue). Mockapetris has disclosed the multicast for a sender to transmit separate messages to each destination and receive separate acknowledgement

transmissions in return (FF7). Thus Mockapetris has disclosed a multicast message system. The Appellants have argued that the invention has reliable datagram services are connectionless as a result of the end-to-end contexts which can greatly reduce scalability (Reply Br. 7), but this is not the language specifically used in the claims. The Appellants have also argued that Mockapetris lacks any sort of one-to-many transmissions capability and makes reference to the number of data packets used in the reference (Reply Br. 7) but Mockapetris has disclosed the use of a multicast (FF7) and the cited claimed limitation [3] does reference or prohibit a certain number of data packets. For these reasons, RFC 793 and Mockapetris have disclosed the argued claim limitations in claim limitation [3].

For these above reasons, the rejection of claim 2 and claim 25, which has similar limitations, is sustained. The Appellants have not argued the dependent claims separately and the rejection of these claims is sustained for the same reasons given above.

Only those arguments actually made by Appellants have been considered in this decision. Arguments which Appellants could have made but chose not to make in the Briefs have not been considered and are deemed to be waived. *See* 37 C.F.R. § 41.37(c)(1)(vii) (2007).

CONCLUSIONS OF LAW

We conclude that Appellants have not shown that the Examiner erred in rejecting claims 2-18, 22, 25-41, and 45 under 35 U.S.C. § 103(a) as unpatentable over RFC 793, Mockapetris, and Block.

We conclude that Appellants have not shown that the Examiner erred in rejecting claims 19-21 and 42-44 under 35 U.S.C. § 103(a) as unpatentable over RFC 793, Mockapetris, Block, and Aldrich.

We conclude that Appellants have not shown that claims 23-24 and 46-47 are rejected under 35 U.S.C. § 103(a) as unpatentable over RFC 793, Mockapetris, Block, and RFC 2236.

DECISION

Examiner's rejection of claims 2-47 is affirmed.

AFFIRMED

MP

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